

**MARIJUANA REGULATORY FRAMEWORKS IN FOUR US STATES:
AN ANALYSIS AGAINST A PUBLIC HEALTH STANDARD**

Supplemental Table A

Rachel A. Barry, MA

Stanton A. Glantz, PhD

Table A: State Regulatory Regimes for Retail Marijuana in Four States Compared to a Public Health Protection Framework						
		<i>Best Practice Standard</i>	CO	WA	OR	AK
General	Regulatory Agency					
	“Health agency (i.e., state health department) rather than “good governance agency” (i.e. liquor control board) as the lead agency” ^{1, 2}	✓	X	X	X	X
		Category Total :1	0	0	0	0
	Advisory Committees and Regulatory Boards					
	Includes an independent board appointed by Executive or Legislative Branch to advise legislature and state agencies on laws, regulations, marijuana prevention and control program, and research program ¹⁻⁴	✓	X	X	✓	X
	Consists of public health officials and academics with experience in marijuana prevention and control with strict conflict of interest policy in place ¹⁻⁴	✓	X	X	✓	X
	Prohibits decision-making authority for marijuana industry or vested interests ¹⁻⁴	✓	X	X	✓	X
		Category Total: 3	0	0	3	0
	Voluntary Agreements					
	Rejects partnerships and non-binding or non-enforceable agreements with the marijuana industry ¹⁻⁴	✓	X	X	X	X
		Category Total: 1	0	0	0	0
Supply-Side Policies	Market Structure and Licensing					
	Requires a state monopoly on production and supply with a clear mandate to protect public health and not generate revenue or to artificially stimulate demand ¹⁻⁸	✓	X	X	X	X
	Requires licenses for each part of the supply chain ¹⁻³	✓	✓	✓	✓	✓
	Limits the size of each stage of production through limits total number of available licenses per stage and restrictions on production, wholesale and retail sales volume ^{1, 2, 9}	✓	X	✓	X	X
		Category Total: 3	1	2	1	1
	Prevention of Sales to Youth					
	Restricts furnishing and sales to 21 and older ^{1-3, 7-15}	✓	✓	✓	✓	✓
	Requires retailer use age verification system through ID scanners at point of sale ^{10, 12, 14}	✓	X	X	X	X
	Designates a single state agency to coordinate a statewide plan to enforce the minimum age of legal access to marijuana products ^{1, 2, 7-11, 13}	✓	✓	✓	✓	✓
	Requires retailers be licensed with fees that cover costs of administration, enforcement inspections, and prosecuting violators ^{1, 2, 7, 10, 12}	✓	✓	✓	✓	✓
	Requires retailers and merchants complete effective and mandatory merchant education programs ^{8, 10, 12-14}	✓	X	X	X	X
	Requires unannounced compliance checks conducted on a routine and frequent basis with dedicated revenue to fund the enforcement program ^{2, 7, 8, 10-14}	✓	X	✓	X	X

Mandates administrative sanctions that increase in severity with each subsequent offense leading to permanent license revocation ^{1-3, 8-14}	✓	✓	✓	✓	✓
Applies penalties for illegal transfer or sale to minors for cultivators, manufacturers, distributors, etc., and not limited to retailers ^{2, 3}	✓	X	✓	✓	X
	Category Total: 8	4	6	5	4
Restrictions on Retail Marijuana Stores					
Prohibits marijuana retailers within 1,000 feet from underage-sensitive areas ¹⁰	✓	✓	✓	X	X
Prohibits retail outlets to be concentrated with a given geographic area ^{1, 2, 6-10, 16}	✓	X	✓	X	X
Restricts the hours and days of trade to minimize harms (i.e., late night sales or Sunday closure) ^{1, 2, 6-10, 15, 16}	✓	X	X	✓	X
Prohibits POS displays and requires that all products are sold behind the counter ^{1, 3, 12, 13, 17}	✓	X	X	X	X
Prohibits vending machine sales, self-service displays; only permits vendor assisted sale ^{2, 3, 12, 13, 17}	✓	X	✓	X	X
Prohibits electronic commerce (i.e. mail order, text messaging, and social media sales) ^{3, 12, 17}	✓	✓	✓	✓	✓
Prohibits marijuana deliveries ^{2, 12}	✓	✓	✓	X	✓
	Category Total: 7	3	5	2	2
Dram Shop Liability					
Implements dram shop liability laws for individuals to recover damages from alcohol retailer who served or sold alcohol to a minor or intoxicated person ^{1, 2, 7-10, 18, 19}	✓	X	X	X	X
	Category Total: 1	0	0	0	0
Illicit Trade					
Requires an effective track and trace program to monitor distribution system and to diversion to the illicit market ^{3, 9, 12}	✓	✓	✓	✓	✓
	Category Total: 1	1	1	1	1
Unitary Market					
Does not maintain dual medical and recreational systems subject to different rules ²⁰⁻²⁴	✓	X	X	X	X
	Category Total: 1	0	0	0	0
Advertising and Marketing					
Prohibits all forms of advertising, promotion, sponsorship ^{1-3, 6, 8, 12, 13, 15, 17, 25, 26}	✓	X	X	X	X
Prohibits, at a minimum, all forms of advertising, promotion, sponsorship that is false, misleading, or deceptive, or that create erroneous impressions about the product ^{3, 12, 25}	✓	✓	✓	✓	✓
Requires health warning messages on all unbanned forms of advertising, promotion, and sponsorship ^{2, 3, 10, 12, 25}	✓	X	✓	✓	✓
Prohibits the use of cartoon characters or imagery that may encourage use and	✓	✓	✓	✓	✓

Demand Reduction Policies	consumption ^{1-3, 9, 10, 12, 25}				
	Prohibits brand stretching and brand sharing ^{3, 12, 13, 25}	✓	X	X	X
	Prohibits product placement and payments to promote marijuana in popular media ^{1-3, 10, 12, 25, 27}	✓	X	X	X
		Category Total: 6	2	3	3
	Price and Tax Measures				
	Price and tax policies used to keep prices artificially high to deter consumption ^{1-3, 7-10, 12, 13, 15, 28-30}	✓	X	X	X
	Implements system to control for tax evasion and avoidance (i.e., tax stamps and tracking-and-tracing system) ^{1, 2, 9, 12}	✓	✓	✓	✓
	Tax monitored, increased or adjusted on a regular basis, potentially (bi)annually, considering inflation and income growth developments to reduce consumption of marijuana products ^{1-3, 9, 10, 12, 28, 29}	✓	X	X	X
	Requires that tax systems are designed in a way that minimizes the incentive for users to shift to cheaper products in the same product category or to cheaper marijuana product categories ^{1-3, 9, 12, 28}	✓	X	X	X
	Prohibits price promotions (i.e., giveaways, volume discounts, free samples, and coupons distribution to the public, happy hours) ^{1, 3, 8-10, 12, 14, 30}	✓	✓	✓	✓
	Requires flat rate minimum or mark-up pricing on all wholesale and retail transactions ^{2, 9, 10}	✓	X	X	X
	Dedicated revenue to enforcement of laws and regulations, and to marijuana prevention and control and research ^{1-3, 10, 15, 25, 29}	✓	X	✓	X
		Category Total: 7	2	3	2
	Prevention and Control Programs				
	Media campaign				
	Aimed at general population (not just youth) ^{2, 3, 5, 10, 12-15, 30, 31}	✓	X	X	X
	Messaging on health risks of consumption and secondhand exposure to marijuana smoke ^{2, 3, 9, 12, 30-33}	✓	✓	✓	✓
	Promotes marijuana free social norm, with messaging on policy change and marijuana industry denormalization ^{2, 3, 12, 13, 30-32}	✓	X	X	X
	Messaging on youth access enforcement program, purpose and outcomes ^{2, 5, 7, 9-11, 14}	✓	✓	X	✓
	Messaging on marijuana intoxication while driving laws and associated penalties ^{1, 2, 5, 9, 10, 14}	✓	✓	✓	✓
	Community-based education				
	Reflect cultural and ethnic diversity ^{1-3, 5, 7, 9, 10, 12, 14, 30, 31, 34}	✓	✓	✓	✓
	Monitoring and Surveillance				
	Collecting data on population level use prevalence, consumption, and marijuana-related harm ^{1, 3, 7, 9, 10, 12, 14, 30}	✓	✓	X	✓
	Collecting data on safety and health risks (poison control center calls, cardiovascular, respiratory and brain development) ^{3, 7, 10, 12, 14, 30}	✓	X	✓	✓

Collecting data on market research on resulting marijuana industry ^{3, 9, 12, 30}	✓	X	X	X	X
Ongoing research program to evaluate the effectiveness of prevention and control programs ^{1, 3, 7, 9, 10, 12, 14, 15, 30, 31}	✓	✓	X	✓	X
	Category Total: 10	6	4	7	3
Smokefree Laws					
Prohibit marijuana use wherever tobacco smoking is prohibited ^{2, 3, 12-15, 30, 32, 35}	✓	X	✓	✓	X
Protect local control over smoking restrictions (i.e., no preemption) ^{7, 10, 12, 15, 30, 36, 37}	✓	✓	✓	✓	✓
	Category Total: 2	1	2	2	1
Local Control					
Allow local option to prohibit marijuana licensees ^{1, 2, 5, 7, 10, 12, 22, 30}	✓	✓	✓	X	✓
Protect local control over retail sales environment ^{1, 2, 5, 7, 10, 12, 22, 30}	✓	✓	✓	X	✓
	Category Total: 2	2	2	0	2
Product Regulation					
Designates government health department with mandate to develop product testing and quality standards ³⁸	✓	X	X	✓	X
Prohibits products containing additives that are toxic or injurious to health (i.e., nicotine, alcohol, or other chemicals) ^{3, 12, 39}	✓	✓	X	✓	X
Prohibit products containing residual butane and other solvents, and other chemicals not safe for consumption or inhalation ^{3, 12, 39}	✓	✓	X	✓	✓
Prohibits the use of palability enhancers to make products appealing to underage and vulnerable populations (i.e., benzaldehyde, maltol, menthol and vanillin, glucose, molasses, honey and sorbitol, cinnamon, ginger, mint, etc.) ^{2, 3, 12, 39}	✓	X	X	X	X
Prohibits or restrict ingredients that have coloring properties in marijuana products ^{2, 3, 39}	✓	✓	✓	✓	✓
Prohibits ingredients in marijuana products that may create the impression that they have a health benefit (i.e., vitamins, amino acids, essential fatty acids) or that are associated with energy and vitality (i.e., caffeine and taurine) ^{2, 3, 39}	✓	X	X	X	X
Requires laboratories be governmental laboratories or independent laboratories that are not owned or controlled, directly or indirectly, by the marijuana industry ^{1, 3, 4, 39}	✓	✓	✓	✓	✓
	Category Total: 7	4	2	5	3
Packaging and Labeling Requirements					
Requires government health authority approve of product packaging and health warning label ^{3, 15, 39, 40}	✓	X	X	✓	X
Requires that products are contained in standardized packaging without the use of logos, colors, or brand names ^{3, 12, 13, 40}	✓	X	X	X	X
Prohibits labeling content that is false, misleading, deceptive, or the use of descriptors to indicate a brand is less harmful or safer than others ^{3, 12, 39, 40}	✓	✓	✓	✓	✓

Requires labels rotate, are large, clear, visible ^{3, 13, 39-41}	✓	X	X	X	X
Requires that warnings at reading level appropriate for children and low literacy adults ^{3, 13, 40}	✓	X	X	X	X
Requires that warnings cover 50% or more of the principal display areas ^{3, 13, 40}	✓	X	X	X	X
Requires that warnings use images in addition to text ^{3, 13, 30, 40}	✓	X	X	✓	X
Category Total: 7		1	1	3	1
Best Practices Total: 67		27	31	34	23
Key: ✓=included; X=not included					

REFERENCES

1. WHO Expert Committee on Problems Related to Alcohol Consumption. WHO expert committee on problems related to alcohol consumption. Second report. *WHO Technical Report Series* 2007; http://www.who.int/substance_abuse/expert_committee_alcohol_trs944.pdf. Accessed 25 Aug 2017.
2. Babor T, Caetano R, Casswell S, Edwards G, Giesbrecht N, Graham K. *Alcohol: No ordinary commodity: Research and public policy* (2nd ed.). Oxford: Oxford University Press; 2010.
3. Conference of the Parties. WHO Framework Convention on Tobacco Control. 2003; <http://apps.who.int/iris/bitstream/10665/42811/1/9241591013.pdf>. Accessed 25 Aug 2015.
4. Conference of the Parties. Guidelines for implementation of Article 5.3 of the WHO Framework Convention on Tobacco Control on the protection of public health policies with respect to tobacco control from commercial and other vested interests of the tobacco industry *Framework Convention on Tobacco Control* 2008; http://www.who.int/fctc/guidelines/article_5_3.pdf?ua=1. Accessed 25 Aug 2017.
5. Centers for Disease Control and Prevention (CDC). The Guide to Community Preventive Services: Preventing Excessive Alcohol Consumption. 2016; www.thecommunityguide.org/alcohol/index.html. Accessed 25 Aug 2017.
6. Hahn RA, Middleton JC, Elder R, et al. Effects of Alcohol Retail Privatization on Excessive Alcohol Consumption and Related Harms A Community Guide Systematic Review. *American Journal of Preventive Medicine*. 2012;42(4):418-427.
7. Office of the Surgeon General. *Facing Addiction in America: The Surgeon General's Report on Alcohol, Drugs, and Health*. Washington, DC: US Dept of Health and Human Services; November 2016.
8. National Institute on Alcohol Abuse and Alcoholism. *Planning Alcohol Interventions Using NIAAA's College Aim Alcohol Intervention Matrix*. Bethesda, MD: NIAAA;2015.
9. World Health Organization. Global strategy to reduce harmful use of alcohol. 2010; http://www.who.int/substance_abuse/activities/gsrhwa/en/. Accessed 25 Aug 2017.
10. Interagency Coordinating Committee for the Prevention of Underage Drinking (ICCPUD). Annual Report to Congress on the Prevention and Reduction of Underage Drinking. 2015; <https://www.stopalcoholabuse.gov/resources/reporttocongress/rtc2015.aspx>. Accessed 25 Aug 2017.
11. Elder RW, Lawrence B, Janes G, et al. Enhanced Enforcement of Laws Prohibiting Sale of Alcohol to Minors: Systematic Review of Effectiveness for Reducing Sales and Underage Drinking. *Transportation Research E-Circular*. 2007;E-C123:181-188.
12. U.S. Department of Health and Human Services. The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General. 2014; <http://www.surgeongeneral.gov/library/reports/50-years-of-progress/exec-summary.pdf>.
13. U.S. Department of Health and Human Services. *Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health;2012.
14. U.S. Surgeon General. The Surgeon General's Call to Action to Prevent and Reduce Underage Drinking. 2007; <http://www.ncbi.nlm.nih.gov/books/NBK44360/>. Accessed 25 Aug 2017.
15. American Public Health Association. Regulating Commercially Legalized Marijuana as a Public Health Priority (Policy Number: 201410). 2014; <https://www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2015/01/23/10/17/regulating-commercially-legalized-marijuana-as-a-public-health-priority>. Accessed 18 Feb 2018.
16. Fielding JE, Rimer BK, Abraido-Lanza A, et al. Recommendations for Reducing Excessive Alcohol Consumption and Alcohol-Related Harms by Limiting Alcohol Outlet Density. *American Journal of Preventive Medicine*. 2009;37(6):570-571.

17. Conference of the Parties. Guidelines for implementation of Article 13 of the WHO Framework Convention on Tobacco Control (Tobacco advertising, promotion and sponsorship) *Framework Convention on Tobacco Control* 2008; http://www.who.int/fctc/guidelines/article_13.pdf?ua=1. Accessed 25 Aug 2017.
18. Mosher JF. Dram shop liability and overservice law enforcement initiatives: A commentary. *Am J Prev Med.* 2011;41(3):350-352.
19. O'Connor R. Effects of dram shop liability and enhanced overservice law enforcement initiatives on excessive alcohol consumption and related harms, a commentary on a New Mexico perspective. *Am J Prev Med.* 2011;41(3):347-349.
20. Murphy P, Carnevale J. Regulating Marijuana in California. 2016; http://www.ppic.org/content/pubs/report/R_416PMR.pdf. Accessed 24 Jun 2016.
21. Mosher J. The 2016 California Marijuana Initiative and Youth: Lessons from Alcohol Policy. 2016; <https://tobacco.ucsf.edu/sites/tobacco.ucsf.edu/files/u9/AUMA%20analysis%20final%207%202016.pdf>. Accessed 25 Aug 2017.
22. Mosher J. *Legal Framework for Alcohol Regulation in the United States*. Irvine, CA: Transportation Research Board of the National Academies; June 5-6 2007.
23. Bohme SR, Zorabedian J, Egilman DS. Maximizing profit and endangering health: corporate strategies to avoid litigation and regulation. *Int J Occup Environ Health.* 2005;11(4):338-348.
24. Freudenberg N. The manufacture of lifestyle: The role of corporations in unhealthy living. *Journal of Public Health Policy.* 2012;33(2):244-256.
25. World Health Organization. Guidelines for implementation Article 5.3, Article 8, Articles 9 and 10 Article 11, Article 12, Article 13, Article 14. *WHO Framework Convention on Tobacco Control* 2013; http://apps.who.int/iris/bitstream/10665/80510/1/9789241505185_eng.pdf. Accessed 25 Aug 2017.
26. Anderson P, de Bruijn A, Angus K, Gordon R, Hastings G. Impact of Alcohol Advertising and Media Exposure on Adolescent Alcohol Use: A Systematic Review of Longitudinal Studies. *Alcohol and Alcoholism.* 2009;44(3):229-243.
27. Collin J. Transnational Tobacco Companies and Cognitive Globalization. In: Kelley L, ed. *Health impacts of globalization : towards global governance*. Basingstoke: Palgrave Macmillan; 2003.
28. Conference of the Parties. Guidelines for Implementation of Article 6 of the WHO FCTC: Price and tax measures to reduce the demand for tobacco. *Framework Convention on Tobacco Control* 2008; http://www.who.int/fctc/guidelines/adopted/Guidelines_article_6.pdf?ua=1. Accessed 25 Aug 2017.
29. Task Force on Community Services. Increasing alcohol beverage taxes is recommended to reduce excessive alcohol consumption and related harms. 2010;38(2):230-232.
30. Centers for Disease Control and Prevention. Best Practices for Comprehensive Tobacco Control Programs--2014. 2014; http://www.cdc.gov/tobacco/stateandcommunity/best_practices/pdfs/2014/comprehensive.pdf. Accessed 25 Aug 2017.
31. Conference of the Parties. Guidelines for implementation of Article 12 of the WHO Framework Convention on Tobacco Control: Education, communication, training and public awareness. *Framework Convention on Tobacco Control* 2010; <http://www.who.int/fctc/guidelines/Decision.pdf?ua=1>. Accessed 25 Aug 2017.
32. U.S. Department of Health and Human Services. The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General. 2006; <http://www.ncbi.nlm.nih.gov/books/NBK44326/>. Accessed 25 Aug 2017.
33. U.S. Department of Health and Human Services. Reducing Tobacco Use: A Report of the Surgeon General. 2000; <https://www.surgeongeneral.gov/library/reports/secondhandsmoke/fullreport.pdf>. Accessed 13 Jun 2016.

34. California Department of Health Services, Tobacco Control Section. A Model for Change: The California Experience in Tobacco Control. 1998;
<http://www.cdph.ca.gov/programs/tobacco/Documents/CDPH%20CTCP%20Refresh/Policy/Social%20Norm%20Change/CTCPmodelforchange1998.pdf>. Accessed 16 Jan 2016.
35. Conference of the Parties. Guidelines on Protection from Exposure to Tobacco Smoke. *Framework Convention on Tobacco Control* 2007;
http://www.who.int/fctc/cop/art%208%20guidelines_english.pdf?ua=1. Accessed 25 Aug 2017.
36. Institute of Medicine. For the Public's Health: Revitalizing Law and Policy to Meet New Challenges. 2011; <http://www.nationalacademies.org/hmd/Reports/2011/For-the-Publics-Health-Revitalizing-Law-and-Policy-to-Meet-New-Challenges.aspx>. Accessed 20 Dec 2016.
37. Pertschuk M, Pomeranz JL, Aoki JR, Larkin MA, Paloma M. Assessing the impact of federal and state preemption in public health: a framework for decision makers. *J Public Health Manag Pract*. 2013;19(3):213-219.
38. Nestle M. Food Politics: How the Food Industry Influences Nutrition and Health. *Food Politics: How the Food Industry Influences Nutrition and Health*. 2007.
39. Conference of the Parties. Partial guidelines for implementation of Articles 9 and 10: Regulation of the contents of tobacco products and regulation of tobacco product disclosures. *Framework Convention on Tobacco Control* 2014;
http://www.who.int/fctc/guidelines/Guideliness_Articles_9_10_rev_240613.pdf?ua=1. Accessed 25 Aug 2017.
40. Conference of the Parties. Guidelines for implementation of Article 11 of the WHO Framework Convention on Tobacco Control (Packaging and labelling of tobacco products) *Framework Convention on Tobacco Control* 2008; http://www.who.int/fctc/guidelines/article_11.pdf?ua=1. Accessed 25 Aug 2017.
41. Hitchman SC, Driezen P, Logel C, Hammond D, Fong GT. Changes in Effectiveness of Cigarette Health Warnings Over Time in Canada and the United States, 2002-2011. *Nicotine & Tobacco Research*. 2014;16(5):536-543.